

Docket No. F-8019

Ser. No. 10/699,136

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) A method of internally cleaning a coil pipe of a heat exchanger, said heat exchanger including an outlet and an inlet providing fluid communication with said coil pipe, said method comprising:

(1) flushing said coil pipe in a first flow direction by:

connecting a first end of a suction hose to said heat exchanger inlet;

connecting a second end of said suction hose to a suction pump and a waste-and-wash water collecting tank; and

connecting one end of an ice-feeding hose to said heat exchanger outlet and a second end of said ice-feeding hose to a hopper;

preparing ice in the form of a cube having a side length of about 1/3-2/3 of an inside diameter of said heat exchanger coil pipe;

mixing ice and water are mixed in ratio of 1 (ice) to 4~6 (water);

supplying said ice and water mixture into said hopper; ~~and~~

engaging said suction pump so that the ice and water are suctioned into said coil pipe outlet, pass internally through said coil pipe in a reverse flow direction ~~of flow~~ towards said inlet, exit said inlet, and collect in said waste-and-wash water collecting tank;

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providing a transparent portion in said ice feeding hose for enabling visual inspection the flow of waste-and-wash water therethrough;

(2) flushing said coil pipe in a second flow direction by:

connecting said first end of said suction hose to said heat exchanger outlet;

connecting said second end of said suction hose to said suction pump and said waste-and-wash water collecting tank; and

connecting said one end of said ice-feeding hose to said heat exchanger inlet and said second end of said ice-feeding hose to said hopper;

supplying said ice and water mixture into said hopper;

engaging said suction pump so that the ice and water are suctioned into said coil pipe inlet, pass internally through said coil pipe in a normal flow direction towards said outlet, exit said outlet, and collect in said waste-and-wash water collecting tank;

(3) alternately flushing said coil pipe in said first and second flow directions for cleaning said coil pipe.

2-5. (Cancelled)

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6. (New) A method of internally cleaning a copper coil pipe of a heat exchanger, said heat exchanger including an outlet and an inlet providing fluid communication with said coil pipe, said method comprising:

(1) flushing said coil pipe in a first flow direction by:

connecting a first end of a suction hose to said heat exchanger inlet;
providing a carriage and disposing a suction pump and a waste-and-wash water collector tank on said carriage;

connecting a second end of said suction hose to said suction pump and said waste-and-wash water collecting tank; and

connecting one end of an ice-feeding hose to said heat exchanger outlet and a second end of said ice-feeding hose to a hopper;

preparing ice in the form of a cube having a side length of about 1/3-2/3 of an inside diameter of said heat exchanger coil pipe;

mixing ice and water are mixed in ratio of 1 (ice) to 4~6 (water);

supplying said ice and water mixture into said hopper;

engaging said suction pump so that the ice and water are suctioned into said coil pipe outlet, pass internally through said coil pipe in a reverse flow direction towards said inlet, exit said inlet, and collect in said waste-and-wash water collecting tank;

providing a transparent portion in said ice feeding hose for enabling visual inspection the flow of waste-and-wash water therethrough;

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(2) flushing said coil pipe in a second flow direction by:

connecting said first end of said suction hose to said heat exchanger outlet;

connecting said second end of said suction hose to said suction pump and said waste-and-wash water collecting tank; and

connecting said one end of said ice-feeding hose to said heat exchanger inlet and said second end of said ice-feeding hose to said hopper;

supplying said ice and water mixture into said hopper;

engaging said suction pump so that the ice and water are suctioned into said coil pipe inlet, pass internally through said coil pipe in said a normal flow direction towards said outlet, exit said outlet, and collect in said waste-and-wash water collecting tank;

(3) alternately flushing said coil pipe in said first and second flow directions;

whereby impact energy of said ice cubes and force from said water through said coil pipe and suction hose into said waste-and-wash water collecting tank clean said coil pipe.